



## SEQUENCE LISTING

&lt;110&gt; MARKOWITZ, Sanford D.

&lt;120&gt; METHODS FOR TREATING PATIENTS AND IDENTIFYING THERAPEUTICS

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&lt;140&gt; 10/650,112

&lt;141&gt; 2003-08-26

&lt;150&gt; 10/274,177

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&lt;151&gt; 2002-08-27

&lt;160&gt; 27

&lt;170&gt; PatentIn version 3.2

&lt;210&gt; 1

&lt;211&gt; 1331

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1

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Glu Gly Gly Tyr Phe Phe Glu Arg Ser Trp Gly His Arg Gly Val Ile  
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Val His Val Ile Asp Pro Lys Ser Gly Thr Val Ile His Ser Asp Arg  
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Phe Asp Thr Tyr Arg Ser Lys Lys Glu Ser Glu Arg Leu Val Gln Tyr  
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195 200 205

Glu Gly Ser Arg Asn Leu Asp Asp Met Ala Arg Lys Ala Met Thr Lys  
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Leu Gly Ser Lys His Phe Leu His Leu Gly Phe Arg His Pro Trp Ser  
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Phe Leu Thr Val Lys Gly Asn Pro Ser Ser Val Glu Asp His Ile  
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Glu Tyr His Gly His Arg Gly Ser Ala Ala Ala Arg Val Phe Lys Leu  
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Phe Gln Thr Glu His Gly Glu Tyr Phe Asn Val Ser Leu Ser Ser Glu  
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Trp Val Gln Asp Val Glu Trp Thr Glu Trp Phe Asp His Asp Lys Val  
290 295 300

Ser Gln Thr Lys Gly Gly Glu Lys Ile Ser Asp Leu Trp Lys Ala His  
305 310 315 320

Pro Gly Lys Ile Cys Asn Arg Pro Ile Asp Ile Gln Ala Thr Thr Met  
325 330 335

Asp Gly Val Asn Leu Ser Thr Glu Val Val Tyr Lys Lys Gly Gln Asp  
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Gln Ser Trp Lys Pro Gly Asp Thr Leu Val Ile Ala Ser Thr Asp Tyr  
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Ser Met Tyr Gln Ala Glu Glu Phe Gln Val Leu Pro Cys Arg Ser Cys  
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Ala Pro Asn Gln Val Lys Val Ala Gly Lys Pro Met Tyr Leu His Ile

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450                    455                    460  
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465                    470                    475                    480  
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His Ile Lys Phe Ala Leu Gly Phe Lys Ala Ala His Leu Glu Gly Thr  
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Glu Leu Lys His Met Gly Gln Gln Leu Val Gly Gln Tyr Pro Ile His  
515                    520                    525  
Phe His Leu Ala Gly Asp Val Asp Glu Arg Gly Tyr Asp Pro Pro  
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Thr Tyr Ile Arg Asp Leu Ser Ile His His Thr Phe Ser Arg Cys Val  
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Thr Val His Gly Ser Asn Gly Leu Leu Ile Lys Asp Val Val Gly Tyr  
565                    570                    575  
Asn Ser Leu Gly His Cys Phe Phe Thr Glu Asp Gly Pro Glu Glu Arg  
580                    585                    590  
Asn Thr Phe Asp His Cys Leu Gly Leu Leu Val Lys Ser Gly Thr Leu  
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Leu Pro Ser Asp Arg Asp Ser Lys Met Cys Lys Met Ile Thr Glu Asp  
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Ser Tyr Pro Gly Tyr Ile Pro Lys Pro Arg Gln Asp Cys Asn Ala Val  
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Ser Thr Phe Trp Met Ala Asn Pro Asn Asn Asn Leu Ile Asn Cys Ala  
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Ala Ala Gly Ser Glu Glu Thr Gly Phe Trp Phe Ile Phe His His Val  
660                    665                    670  
Pro Thr Gly Pro Ser Val Gly Met Tyr Ser Pro Gly Tyr Ser Glu His  
675                    680                    685  
Ile Pro Leu Gly Lys Phe Tyr Asn Asn Arg Ala His Ser Asn Tyr Arg  
690                    695                    700  
Ala Gly Met Ile Ile Asp Asn Gly Val Lys Thr Thr Glu Ala Ser Ala  
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Lys Asp Lys Arg Pro Phe Leu Ser Ile Ile Ser Ala Arg Tyr Ser Pro  
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His Gln Asp Ala Asp Pro Leu Lys Pro Arg Glu Pro Ala Ile Ile Arg  
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His Phe Ile Ala Tyr Lys Asn Gln Asp His Gly Ala Trp Leu Arg Gly  
755 760 765

Gly Asp Val Trp Leu Asp Ser Cys Arg Phe Ala Asp Asn Gly Ile Gly  
770 775 780

Leu Thr Leu Ala Ser Gly Gly Thr Phe Pro Tyr Asp Asp Gly Ser Lys  
785 790 795 800

Gln Glu Ile Lys Asn Ser Leu Phe Val Gly Glu Ser Gly Asn Val Gly  
805 810 815

Thr Glu Met Met Asp Asn Arg Ile Trp Gly Pro Gly Gly Leu Asp His  
820 825 830

Ser Gly Arg Thr Leu Pro Ile Gly Gln Asn Phe Pro Ile Arg Gly Ile  
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Gln Leu Tyr Asp Gly Pro Ile Asn Ile Gln Asn Cys Thr Phe Arg Lys  
850 855 860

Phe Val Ala Leu Glu Gly Arg His Thr Ser Ala Leu Ala Phe Arg Leu  
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Asn Asn Ala Trp Gln Ser Cys Pro His Asn Asn Val Thr Gly Ile Ala  
885 890 895

Phe Glu Asp Val Pro Ile Thr Ser Arg Val Phe Phe Gly Glu Pro Gly  
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Pro Trp Phe Asn Gln Leu Asp Met Asp Gly Asp Lys Thr Ser Val Phe  
915 920 925

His Asp Val Asp Gly Ser Val Ser Glu Tyr Pro Gly Ser Tyr Leu Thr  
930 935 940

Lys Asn Asp Asn Trp Leu Val Arg His Pro Asp Cys Ile Asn Val Pro  
945 950 955 960

Asp Trp Arg Gly Ala Ile Cys Ser Gly Cys Tyr Ala Gln Met Tyr Ile  
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Phe Pro Ser His Pro Leu Tyr Leu Glu Gly Ala Leu Thr Arg Ser Thr  
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His Tyr Gln Gln Tyr Gln Pro Val Val Thr Leu Gln Lys Gly Tyr  
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Thr Ile His Trp Asp Gln Thr Ala Pro Ala Glu Leu Ala Ile Trp  
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Leu Ile Asn Phe Asn Lys Gly Asp Trp Ile Arg Val Gly Leu Cys  
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Tyr Pro Arg Gly Thr Thr Phe Ser Ile Leu Ser Asp Val His Asn  
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Arg Leu Leu Lys Gln Thr Ser Lys Thr Gly Val Phe Val Arg Thr  
1070 1075 1080

Leu Gln Met Asp Lys Val Glu Gln Ser Tyr Pro Gly Arg Ser His  
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Tyr Tyr Trp Asp Glu Asp Ser Gly Leu Leu Phe Leu Lys Leu Lys  
1100 1105 1110

Ala Gln Asn Glu Arg Glu Lys Phe Ala Phe Cys Ser Met Lys Gly  
1115 1120 1125

Cys Glu Arg Ile Lys Ile Lys Ala Leu Ile Pro Lys Asn Ala Gly  
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Val Ser Asp Cys Thr Ala Thr Ala Tyr Pro Lys Phe Thr Glu Arg  
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Ala Val Val Asp Val Pro Met Pro Lys Lys Leu Phe Gly Ser Gln  
1160 1165 1170

Leu Lys Thr Lys Asp His Phe Leu Glu Val Lys Met Glu Ser Ser  
1175 1180 1185

Lys Gln His Phe Phe His Leu Trp Asn Asp Phe Ala Tyr Ile Glu  
1190 1195 1200

Val Asp Gly Lys Lys Tyr Pro Ser Ser Glu Asp Gly Ile Gln Val  
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Val Val Ile Asp Gly Asn Gln Gly Arg Val Val Ser His Thr Ser  
1220 1225 1230

Phe Arg Asn Ser Ile Leu Gln Gly Ile Pro Trp Gln Leu Phe Asn  
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Tyr Val Ala Thr Ile Pro Asp Asn Ser Ile Val Leu Met Ala Ser  
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Lys Gly Arg Tyr Val Ser Arg Gly Pro Trp Thr Arg Val Leu Glu  
1265 1270 1275

Lys Leu Gly Ala Asp Arg Gly Leu Lys Leu Lys Glu Gln Met Ala  
1280 1285 1290

Phe Val Gly Phe Lys Gly Ser Phe Arg Pro Ile Trp Val Thr Leu  
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Pro Val Val Lys Lys Lys Lys Leu  
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35 40 45

Lys Leu Val Ile Lys Asp His Asp Glu Pro Ile Val Leu Arg Thr Arg  
50 55 60

His Ile Leu Ile Asp Asn Gly Gly Glu Leu His Ala Gly Ser Ala Leu  
65 70 75 80

Cys Pro Phe Gln Gly Asn Phe Thr Ile Ile Leu Tyr Gly Arg Ala Asp  
85 90 95

Glu Gly Ile Gln Pro Asp Pro Tyr Tyr Gly Leu Lys Tyr Ile Gly Val  
100 105 110

Gly Lys Gly Gly Ala Leu Glu Leu His Gly Gln Lys Lys Leu Ser Trp  
115 120 125

Thr Phe Leu Asn Lys Thr Leu His Pro Gly Gly Met Ala Glu Gly Gly  
130 135 140

Tyr Phe Phe Glu Arg Ser Trp Gly His Arg Gly Val Ile Val His Val  
145 150 155 160

Ile Asp Pro Lys Ser Gly Thr Val Ile His Ser Asp Arg Phe Asp Thr  
165 170 175

Tyr Arg Ser Lys Lys Glu Ser Glu Arg Leu Val Gln Tyr Leu Asn Ala  
180 185 190

Val Pro Asp Gly Arg Ile Leu Ser Val Ala Val Asn Asp Glu Gly Ser  
195 200 205

Arg Asn Leu Asp Asp Met Ala Arg Lys Ala Met Thr Lys Leu Gly Ser  
210 215 220

Lys His Phe Leu His Leu Gly Phe Arg His Pro Trp Ser Phe Leu Thr  
225 230 235 240

Val Lys Gly Asn Pro Ser Ser Val Glu Asp His Ile Glu Tyr His

245                    250                    255

Gly His Arg Gly Ser Ala Ala Ala Arg Val Phe Lys Leu Phe Gln Thr  
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Glu His Gly Glu Tyr Phe Asn Val Ser Leu Ser Ser Glu Trp Val Gln  
275                    280                    285

Asp Val Glu Trp Thr Glu Trp Phe Asp His Asp Lys Val Ser Gln Thr  
290                    295                    300

Lys Gly Gly Glu Lys Ile Ser Asp Leu Trp Lys Ala His Pro Gly Lys  
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Ile Cys Asn Arg Pro Ile Asp Ile Gln Ala Thr Thr Met Asp Gly Val  
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Asn Leu Ser Thr Glu Val Val Tyr Lys Lys Gly Gln Asp Tyr Arg Phe  
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Ala Cys Tyr Asp Arg Gly Arg Ala Cys Arg Ser Tyr Arg Val Arg Phe  
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Leu Cys Gly Lys Pro Val Arg Pro Lys Leu Thr Val Thr Ile Asp Thr  
370                    375                    380

Asn Val Asn Ser Thr Ile Leu Asn Leu Glu Asp Asn Val Gln Ser Trp  
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Lys Pro Gly Asp Thr Leu Val Ile Ala Ser Thr Asp Tyr Ser Met Tyr  
405                    410                    415

Gln Ala Glu Glu Phe Gln Val Leu Pro Cys Arg Ser Cys Ala Pro Asn  
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Gln Val Lys Val Ala Gly Lys Pro Met Tyr Leu His Ile Gly Glu Glu  
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Ile Asp Gly Val Asp Met Arg Ala Glu Val Gly Leu Leu Ser Arg Asn  
450                    455                    460

Ile Ile Val Met Gly Glu Met Glu Asp Lys Cys Tyr Pro Tyr Arg Asn  
465                    470                    475                    480

His Ile Cys Asn Phe Phe Asp Phe Asp Thr Phe Gly Gly His Ile Lys  
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Phe Ala Leu Gly Phe Lys Ala Ala His Leu Glu Gly Thr Glu Leu Lys  
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His Met Gly Gln Gln Leu Val Gly Gln Tyr Pro Ile His Phe His Leu  
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Ala Gly Asp Val Asp Glu Arg Gly Gly Tyr Asp Pro Pro Thr Tyr Ile  
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Arg Asp Leu Ser Ile His His Thr Phe Ser Arg Cys Val Thr Val His

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Gly His Cys Phe Phe Thr Glu Asp Gly Pro Glu Glu Arg Asn Thr Phe  
580                    585                    590  
Asp His Cys Leu Gly Leu Leu Val Lys Ser Gly Thr Leu Leu Pro Ser  
595                    600                    605  
Asp Arg Asp Ser Lys Met Cys Lys Met Ile Thr Glu Asp Ser Tyr Pro  
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Gly Tyr Ile Pro Lys Pro Arg Gln Asp Cys Asn Ala Val Ser Thr Phe  
625                    630                    635                    640  
Trp Met Ala Asn Pro Asn Asn Asn Leu Ile Asn Cys Ala Ala Ala Gly  
645                    650                    655  
Ser Glu Glu Thr Gly Phe Trp Phe Ile Phe His His Val Pro Thr Gly  
660                    665                    670  
Pro Ser Val Gly Met Tyr Ser Pro Gly Tyr Ser Glu His Ile Pro Leu  
675                    680                    685  
Gly Lys Phe Tyr Asn Asn Arg Ala His Ser Asn Tyr Arg Ala Gly Met  
690                    695                    700  
Ile Ile Asp Asn Gly Val Lys Thr Thr Glu Ala Ser Ala Lys Asp Lys  
705                    710                    715                    720  
Arg Pro Phe Leu Ser Ile Ile Ser Ala Arg Tyr Ser Pro His Gln Asp  
725                    730                    735  
Ala Asp Pro Leu Lys Pro Arg Glu Pro Ala Ile Ile Arg His Phe Ile  
740                    745                    750  
Ala Tyr Lys Asn Gln Asp His Gly Ala Trp Leu Arg Gly Gly Asp Val  
755                    760                    765  
Trp Leu Asp Ser Cys Arg Phe Ala Asp Asn Gly Ile Gly Leu Thr Leu  
770                    775                    780  
Ala Ser Gly Gly Thr Phe Pro Tyr Asp Asp Gly Ser Lys Gln Glu Ile  
785                    790                    795                    800  
Lys Asn Ser Leu Phe Val Gly Glu Ser Gly Asn Val Gly Thr Glu Met  
805                    810                    815  
Met Asp Asn Arg Ile Trp Gly Pro Gly Gly Leu Asp His Ser Gly Arg  
820                    825                    830  
Thr Leu Pro Ile Gly Gln Asn Phe Pro Ile Arg Gly Ile Gln Leu Tyr  
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Asp Gly Pro Ile Asn Ile Gln Asn Cys Thr Phe Arg Lys Phe Val Ala

850                    855                    860  
Leu Glu Gly Arg His Thr Ser Ala Leu Ala Phe Arg Leu Asn Asn Ala  
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Trp Gln Ser Cys Pro His Asn Asn Val Thr Gly Ile Ala Phe Glu Asp  
885                    890                    895  
Val Pro Ile Thr Ser Arg Val Phe Phe Gly Glu Pro Gly Pro Trp Phe  
900                    905                    910  
Asn Gln Leu Asp Met Asp Gly Asp Lys Thr Ser Val Phe His Asp Val  
915                    920                    925  
Asp Gly Ser Val Ser Glu Tyr Pro Gly Ser Tyr Leu Thr Lys Asn Asp  
930                    935                    940  
Asn Trp Leu Val Arg His Pro Asp Cys Ile Asn Val Pro Asp Trp Arg  
945                    950                    955                    960  
Gly Ala Ile Cys Ser Gly Cys Tyr Ala Gln Met Tyr Ile Gln Ala Tyr  
965                    970                    975  
Lys Thr Ser Asn Leu Arg Met Lys Ile Ile Lys Asn Asp Phe Pro Ser  
980                    985                    990  
His Pro Leu Tyr Leu Glu Gly Ala Leu Thr Arg Ser Thr His Tyr Gln  
995                    1000                  1005  
Gln Tyr Gln Pro Val Val Thr Leu Gln Lys Gly Tyr Thr Ile His  
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Trp Asp Gln Thr Ala Pro Ala Glu Leu Ala Ile Trp Leu Ile Asn  
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Phe Asn Lys Gly Asp Trp Ile Arg Val Gly Leu Cys Tyr Pro Arg  
1040                  1045                  1050  
Gly Thr Thr Phe Ser Ile Leu Ser Asp Val His Asn Arg Leu Leu  
1055                  1060                  1065  
Lys Gln Thr Ser Lys Thr Gly Val Phe Val Arg Thr Leu Gln Met  
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Asp Lys Val Glu Gln Ser Tyr Pro Gly Arg Ser His Tyr Tyr Trp  
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Asp Glu Asp Ser Gly Leu Leu Phe Leu Lys Leu Lys Ala Gln Asn  
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Glu Arg Glu Lys Phe Ala Phe Cys Ser Met Lys Gly Cys Glu Arg  
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Cys Thr Ala Thr Ala Tyr Pro Lys Phe Thr Glu Arg Ala Val Val

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1160                    1165                    1170  
  
Lys Asp His Phe Leu Glu Val Lys Met Glu Ser Ser Lys Gln His  
1175                    1180                    1185  
  
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Thr Ile Pro Asp Asn Ser Ile Val Leu Met Ala Ser Lys Gly Arg  
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Tyr Val Ser Arg Gly Pro Trp Thr Arg Val Leu Glu Lys Leu Gly  
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Ala Asp Arg Gly Leu Lys Leu Lys Glu Gln Met Ala Phe Val Gly  
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Phe Lys Gly Ser Phe Arg Pro Ile Trp Val Thr Leu Asp Thr Glu  
1295                    1300                    1305  
  
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50                    55                            60

Val Arg Val Gly Ala Phe Gln Phe Ser Ser Thr Pro His Leu Glu Phe  
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Pro Leu Asp Ser Phe Ser Thr Gln Gln Glu Val Lys Ala Arg Ile Lys  
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Arg Met Val Phe Lys Gly Gly Arg Thr Glu Thr Glu Leu Ala Leu Lys  
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115 120 125

Gln Ile Leu Ile Ile Val Thr Asp Gly Lys Ser Gln Gly Asp Val Ala  
130 135 140

Leu Pro Ser Lys Gln Leu Lys Glu Arg Gly Val Thr Val Phe Ala Val  
145 150 155 160

Gly Val Arg Phe Pro Arg Trp Glu Glu Leu His Ala Leu Ala Ser Glu  
165 170 175

Pro Arg Gly Gln His Val Leu Leu Ala Glu Gln Val Glu Asp Ala Thr  
180 185 190

Asn Gly Leu Phe Ser Thr Leu Ser Ser Ser Ala Ile Cys Ser Ser Ala  
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Thr Pro Asp Cys Arg Val Glu Ala His Pro Cys Glu His Arg Thr Leu  
210 215 220

Glu Met Val Arg Glu Phe Ala Gly Asn Ala Pro Cys Trp Arg Gly Ser  
225 230 235 240

Arg Arg Thr Leu Ala Val Leu Ala Ala His Cys Pro Phe Tyr Ser Trp  
245 250 255

Lys Arg Val Phe Leu Thr His Pro Ala Thr Cys Tyr Arg Thr Thr Cys  
260 265 270

Pro Gly Pro Cys Asp Ser Gln Pro Cys Gln Asn Gly Gly Thr Cys Val  
275 280 285

Pro Glu Gly Leu Asp Gly Tyr Gln Cys Leu Cys Pro Leu Ala Phe Gly  
290 295 300

Gly Glu Ala Asn Cys Ala Leu Lys Leu Ser Leu Glu Cys Arg Val Asp  
305 310 315 320

Leu Leu Phe Leu Leu Asp Ser Ser Ala Gly Thr Thr Leu Asp Gly Phe  
325 330 335

Leu Arg Ala Lys Val Phe Val Lys Arg Phe Val Arg Ala Val Leu Ser  
340 345 350

Glu Asp Ser Arg Ala Arg Val Gly Val Ala Thr Tyr Ser Arg Glu Leu  
355 360 365

Leu Val Ala Val Pro Val Gly Glu Tyr Gln Asp Val Pro Asp Leu Val  
370 375 380

Trp Ser Leu Asp Gly Ile Pro Phe Arg Gly Gly Pro Thr Leu Thr Gly  
385 390 395 400

Ser Ala Leu Arg Gln Ala Ala Glu Arg Gly Phe Gly Ser Ala Thr Arg  
405 410 415

Thr Gly Gln Asp Arg Pro Arg Arg Val Val Val Leu Leu Thr Glu Ser  
420 425 430

His Ser Glu Asp Glu Val Ala Gly Pro Ala Arg His Ala Arg Ala Arg  
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Glu Leu Leu Leu Leu Gly Val Gly Ser Glu Ala Val Arg Ala Glu Leu  
450 455 460

Glu Glu Ile Thr Gly Ser Pro Lys His Val Met Val Tyr Ser Asp Pro  
465 470 475 480

Gln Asp Leu Phe Asn Gln Ile Pro Glu Leu Gln Gly Lys Leu Cys Ser  
485 490 495

Arg Gln Arg Pro Gly Cys Arg Thr Gln Ala Leu Asp Leu Val Phe Met  
500 505 510

Leu Asp Thr Ser Ala Ser Val Gly Pro Glu Asn Phe Ala Gln Met Gln  
515 520 525

Ser Phe Val Arg Ser Cys Ala Leu Gln Phe Glu Val Asn Pro Asp Val  
530 535 540

Thr Gln Val Gly Leu Val Val Tyr Gly Ser Gln Val Gln Thr Ala Phe  
545 550 555 560

Gly Leu Asp Thr Lys Pro Thr Arg Ala Ala Met Leu Arg Ala Ile Ser  
565 570 575

Gln Ala Pro Tyr Leu Gly Gly Val Gly Ser Ala Gly Thr Ala Leu Leu  
580 585 590

His Ile Tyr Asp Lys Val Met Thr Val Gln Arg Gly Ala Arg Pro Gly  
595 600 605

Val Pro Lys Ala Val Val Leu Thr Gly Gly Arg Gly Ala Glu Asp  
610 615 620

Ala Ala Val Pro Ala Gln Lys Leu Arg Asn Asn Gly Ile Ser Val Leu  
625 630 635 640

Val Val Gly Val Gly Pro Val Leu Ser Glu Gly Leu Arg Arg Leu Ala  
645 650 655

Gly Pro Arg Asp Ser Leu Ile His Val Ala Ala Tyr Ala Asp Leu Arg

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Tyr His Gln Asp Val Leu Ile Glu Trp Leu Cys Gly Glu Ala Lys Gln		
675	680	685
Pro Val Asn Leu Cys Lys Pro Ser Pro Cys Met Asn Glu Gly Ser Cys		
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Gly Pro His Cys Glu Asn Arg Phe Leu Arg Arg Pro		
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gctcacctct	tctgccacgg	tctattccat	ccacatctca	gagggaggca	agctggcat	300
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tggtaaagga	ggcgctttt	agttgcatgg	acagaaaaag	ctctcctgg	catttctgaa	540
caagaccctt	cacccaggtg	gcatggcaga	aggaggctat	tttttgaaa	ggagctgggg	600
ccaccgttgg	gttattgttc	atgtcatcga	ccccaaatca	ggcacagtca	tccattctga	660
ccggtttgac	acctatacat	ccaagaaaga	gagtaacgt	ctggccagt	atttgaacgc	720
ggtgcccgtat	ggcaggatcc	tttctgtgc	agtgaatgt	gaaggttctc	gaaatctgg	780
tgacatggcc	aggaaggcga	tgaccaaatt	ggaaagcaaa	cacttcctgc	acttggatt	840
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tattgaatat	catggacatc	gaggctctgc	tgctccccgg	gtattcaaat	tgttccagac	960
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gacggagtgg	ttcgatcatg	ataaaagtatc	tcagactaaa	ggtggggaga	aaatttcaga	1080

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ctggcggaga tcaacgagta cctcatgggc aagttccct tttccgcgg cagctacacg	480
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<400> 10

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gtccggggct gctaacaacg gctacattcc tccccaggg ccaaggaaa tcctgagcgc	180
aggccagggt tgtttggtt tgaggtgtgc tggatgaaa ggcaccctgg aagtggaaagg	240
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tgctcagatt attcttctca ttgacaatgc caggatggca gtggatgact tcaacctcaa	540
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cccagggaaag atctgattaa ggtcctggag gatatgagac aagaatatga gcttataata	660
aagaagaagc atcgagactt ggacacttgg tataaagaac agtctgcagc catgtcccag	720
gaggcagcca gtccagccac tgtgcagagc agacaaggtg acatccacga actgaagcgc	780
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tgtcaagtga atgaaatcca aaagcacgca tgagaccaat gaaagttcc gcctgttgc 1200  
aaatctattt tcccccaagg aaagtcccttg cacagacacc agtgagttag ttctaaaaga 1260  
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gacttctcat aatgctctta atatattgca ctTTTCTAAT caaagtgcga gtttatgagg 1380  
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<212> DNA  
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<400> 11

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tcaaaggaa catataaatg tttcctattt ttaatgtggc aatagtgtag ctaacactgg 180  
tacagacgga ataaacacac ctctaataattt ctcctgaaga tttggtgatc cagttcaaa 240  
taaggtatgg gaaaaacaga tgTTTcatt atcgccactt aatccttact tccgattata 300  
attatacatg tttggctgta ataactatac taaagcatgc ttgtgaaagt agacttctac 360  
aaggacagaa aacccacaac aacaaagatc gatcacgaaa gacaaggcat a 411

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<212> DNA  
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<400> 12

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aaactgttta aaacaaagag caattgtgg ataaatcagg aatagattct cttgaccatg 240  
tgacatctga tgctgtggaa ctgc当地 aactca gttatccct tactcaccta aaggggagaa aagaaacccc attcgaaaat 360

ttgttcgtac acctgaaagt gttcacgcaa gtgattcatc aagtgactca tctttgaac 420  
caataccatt gactataaaa gctatTTTg aaagattcaa gaacaggaaa aagagatata 480  
aaaaaaagaa aaagaggagg taccagccaa caggaagacc acggggaga ccagaaggaa 540  
ggagaaatcc tatatactca ctaatagata agaagaaaca atttagaagc agaggatctg 600  
gcttcccatt tttagaatca gagaatgaaa aaaacgcacc ttggagaaaa atttaacgt 660  
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aagagggctt atgaggctgt gaaacccaga gctcttaacg ctgtgaccaa agatggaagt 1920  
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aaacgtataa atccatgatt gttgccatgt gagagttta aaggttaatc aaaatttctc 2040  
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 20 25 30  
  
 Ala Ala Gly Cys Pro Asp Gln Ser Pro Glu Leu Gln Pro Trp Asn Pro  
 35 40 45  
  
 Gly His Asp Gln Asp His His Val His Ile Gly Gln Gly Lys Thr Leu  
 50 55 60  
  
 Leu Leu Thr Ser Ser Ala Thr Val Tyr Ser Ile His Ile Ser Glu Gly  
 65 70 75 80  
  
 Gly Lys Leu Val Ile Lys Asp His Asp Glu Pro Ile Val Leu Arg Thr  
 85 90 95  
  
 Arg His Ile Leu Ile Asp Asn Gly Gly Glu Leu His Ala Gly Ser Ala  
 100 105 110  
  
 Leu Cys Pro Phe Gln Gly Asn Phe Thr Ile Ile Leu Tyr Gly Arg Ala  
 115 120 125  
  
 Asp Glu Gly Ile Gln Pro Asp Pro Tyr Tyr Gly Leu Lys Tyr Ile Gly  
 130 135 140  
  
 Val Gly Lys Gly Gly Ala Leu Glu Leu His Gly Gln Lys Lys Leu Ser  
 145 150 155 160  
  
 Trp Thr Phe Leu Asn Lys Thr Leu His Pro Gly Gly Met Ala Glu Gly  
 165 170 175  
  
 Gly Tyr Phe Phe Glu Arg Ser Trp Gly His Arg Gly Val Ile Val His  
 180 185 190  
  
 Val Ile Asp Pro Lys Ser Gly Thr Val Ile His Ser Asp Arg Phe Asp  
 195 200 205  
  
 Thr Tyr Arg Ser Lys Lys Glu Ser Glu Arg Leu Val Gln Tyr Leu Asn  
 210 215 220

Ala Val Pro Asp Gly Arg Ile Leu Ser Val Ala Val Asn Asp Glu Gly  
225 230 235 240

Ser Arg Asn Leu Asp Asp Met Ala Arg Lys Ala Met Thr Lys Leu Gly  
245 250 255

Ser Lys His Phe Leu His Leu Gly Phe Arg His Pro Trp Ser Phe Leu  
260 265 270

Thr Val Lys Gly Asn Pro Ser Ser Val Glu Asp His Ile Glu Tyr  
275 280 285

His Gly His Arg Gly Ser Ala Ala Ala Arg Val Phe Lys Leu Phe Gln  
290 295 300

Thr Glu His Gly Glu Tyr Phe Asn Val Ser Leu Ser Ser Glu Trp Val  
305 310 315 320

Gln Asp Val Glu Trp Thr Glu Trp Phe Asp His Asp Lys Val Ser Gln  
325 330 335

Thr Lys Gly Gly Glu Lys Ile Ser Asp Leu Trp Lys Ala His Pro Gly  
340 345 350

Lys Ile Cys Asn Arg Pro Ile Asp Ile Gln Ala Thr Thr Met Asp Gly  
355 360 365

Val Asn Leu Ser Thr Glu Val Val Tyr Lys Lys Gly Gln Asp Tyr Arg  
370 375 380

Phe Ala Cys Tyr Asp Arg Gly Arg Ala Cys Arg Ser Tyr Arg Val Arg  
385 390 395 400

Phe Leu Cys Gly Lys Pro Val Arg Pro Lys Leu Thr Val Thr Ile Asp  
405 410 415

Thr Asn Val Asn Ser Thr Ile Leu Asn Leu Glu Asp Asn Val Gln Ser  
420 425 430

Trp Lys Pro Gly Asp Thr Leu Val Ile Ala Ser Thr Asp Tyr Ser Met  
435 440 445

Tyr Gln Ala Glu Glu Phe Gln Val Leu Pro Cys Arg Ser Cys Ala Pro  
450 455 460

Asn Gln Val Lys Val Ala Gly Lys Pro Met Tyr Leu His Ile Gly Glu  
465 470 475 480

Glu Ile Asp Gly Val Asp Met Arg Ala Glu Val Gly Leu Leu Ser Arg  
485 490 495

Asn Ile Ile Val Met Gly Glu Met Glu Asp Lys Cys Tyr Pro Tyr Arg  
500 505 510

Asn His Ile Cys Asn Phe Phe Asp Phe Asp Thr Phe Gly Gly His Ile  
515 520 525

Lys Phe Ala Leu Gly Phe Lys Ala Ala His Leu Glu Gly Thr Glu Leu  
530 535 540

Lys His Met Gly Gln Gln Leu Val Gly Gln Tyr Pro Ile His Phe His  
545 550 555 560

Leu Ala Gly Asp Val Asp Glu Arg Gly Gly Tyr Asp Pro Pro Thr Tyr  
565 570 575

Ile Arg Asp Leu Ser Ile His His Thr Phe Ser Arg Cys Val Thr Val  
580 585 590

His Gly Ser Asn Gly Leu Leu Ile Lys Asp Val Val Gly Tyr Asn Ser  
595 600 605

Leu Gly His Cys Phe Phe Thr Glu Asp Gly Pro Glu Glu Arg Asn Thr  
610 615 620

Phe Asp His Cys Leu Gly Leu Leu Val Lys Ser Gly Thr Leu Leu Pro  
625 630 635 640

Ser Asp Arg Asp Ser Lys Met Cys Lys Met Ile Thr Glu Asp Ser Tyr  
645 650 655

Pro Gly Tyr Ile Pro Lys Pro Arg Gln Asp Cys Asn Ala Val Ser Thr  
660 665 670

Phe Trp Met Ala Asn Pro Asn Asn Asn Leu Ile Asn Cys Ala Ala Ala  
675 680 685

Gly Ser Glu Glu Thr Gly Phe Trp Phe Ile Phe His His Val Pro Thr  
690 695 700

Gly Pro Ser Val Gly Met Tyr Ser Pro Gly Tyr Ser Glu His Ile Pro  
705 710 715 720

Leu Gly Lys Phe Tyr Asn Asn Arg Ala His Ser Asn Tyr Arg Ala Gly  
725 730 735

Met Ile Ile Asp Asn Gly Val Lys Thr Thr Glu Ala Ser Ala Lys Asp  
740 745 750

Lys Arg Pro Phe Leu Ser Ile Ile Ser Ala Arg Tyr Ser Pro His Gln  
755 760 765

Asp Ala Asp Pro Leu Lys Pro Arg Glu Pro Ala Ile Ile Arg His Phe  
770 775 780

Ile Ala Tyr Lys Asn Gln Asp His Gly Ala Trp Leu Arg Gly Gly Asp  
785 790 795 800

Val Trp Leu Asp Ser Cys Arg Phe Ala Asp Asn Gly Ile Gly Leu Thr  
805 810 815

Leu Ala Ser Gly Gly Thr Phe Pro Tyr Asp Asp Gly Ser Lys Gln Glu  
820 825 830

Ile Lys Asn Ser Leu Phe Val Gly Glu Ser Gly Asn Val Gly Thr Glu  
835 840 845

Met Met Asp Asn Arg Ile Trp Gly Pro Gly Gly Leu Asp His Ser Gly  
850 855 860

Arg Thr Leu Pro Ile Gly Gln Asn Phe Pro Ile Arg Gly Ile Gln Leu  
865 870 875 880

Tyr Asp Gly Pro Ile Asn Ile Gln Asn Cys Thr Phe Arg Lys Phe Val  
885 890 895

Ala Leu Glu Gly Arg His Thr Ser Ala Leu Ala Phe Arg Leu Asn Asn  
900 905 910

Ala Trp Gln Ser Cys Pro His Asn Asn Val Thr Gly Ile Ala Phe Glu  
915 920 925

Asp Val Pro Ile Thr Ser Arg Val Phe Phe Gly Glu Pro Gly Pro Trp  
930 935 940

Phe Asn Gln Leu Asp Met Asp Gly Asp Lys Thr Ser Val Phe His Asp  
945 950 955 960

Val Asp Gly Ser Val Ser Glu Tyr Pro Gly Ser Tyr Leu Thr Lys Asn  
965 970 975

Asp Asn Trp Leu Val Arg His Pro Asp Cys Ile Asn Val Pro Asp Trp  
980 985 990

Arg Gly Ala Ile Cys Ser Gly Cys Tyr Ala Gln Met Tyr Ile Gln Ala  
995 1000 1005

Tyr Lys Thr Ser Asn Leu Arg Met Lys Ile Ile Lys Asn Asp Phe  
1010 1015 1020

Pro Ser His Pro Leu Tyr Leu Glu Gly Ala Leu Thr Arg Ser Thr  
1025 1030 1035

His Tyr Gln Gln Tyr Gln Pro Val Val Thr Leu Gln Lys Gly Tyr  
1040 1045 1050

Thr Ile His Trp Asp Gln Thr Ala Pro Ala Glu Leu Ala Ile Trp  
1055 1060 1065

Leu Ile Asn Phe Asn Lys Gly Asp Trp Ile Arg Val Gly Leu Cys  
1070 1075 1080

Tyr Pro Arg Gly Thr Thr Phe Ser Ile Leu Ser Asp Val His Asn  
1085 1090 1095

Arg Leu Leu Lys Gln Thr Ser Lys Thr Gly Val Phe Val Arg Thr  
1100 1105 1110

Leu Gln Met Asp Lys Val Glu Gln Ser Tyr Pro Gly Arg Ser His  
1115 1120 1125

Tyr Tyr Trp Asp Glu Asp Ser Gly Leu Leu Phe Leu Lys Leu Lys  
1130 1135 1140

Ala Gln Asn Glu Arg Glu Lys Phe Ala Phe Cys Ser Met Lys Gly  
1145 1150 1155

Cys Glu Arg Ile Lys Ile Lys Ala Leu Ile Pro Lys Asn Ala Gly  
1160 1165 1170

Val Ser Asp Cys Thr Ala Thr Ala Tyr Pro Lys Phe Thr Glu Arg  
1175 1180 1185

Ala Val Val Asp Val Pro Met Pro Lys Lys Leu Phe Gly Ser Gln  
1190 1195 1200

Leu Lys Thr Lys Asp His Phe Leu Glu Val Lys Met Glu Ser Ser  
1205 1210 1215

Lys Gln His Phe Phe His Leu Trp Asn Asp Phe Ala Tyr Ile Glu  
1220 1225 1230

Val Asp Gly Lys Lys Tyr Pro Ser Ser Glu Asp Gly Ile Gln Val  
1235 1240 1245

Val Val Ile Asp Gly Asn Gln Gly Arg Val Val Ser His Thr Ser  
1250 1255 1260

Phe Arg Asn Ser Ile Leu Gln Gly Ile Pro Trp Gln Leu Phe Asn  
1265 1270 1275

Tyr Val Ala Thr Ile Pro Asp Asn Ser Ile Val Leu Met Ala Ser  
1280 1285 1290

Lys Gly Arg Tyr Val Ser Arg Gly Pro Trp Thr Arg Val Leu Glu  
1295 1300 1305

Lys Leu Gly Ala Asp Arg Gly Leu Lys Leu Lys Glu Gln Met Ala  
1310 1315 1320

Phe Val Gly Phe Lys Gly Ser Phe Arg Pro Ile Trp Val Thr Leu  
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Asp Thr Glu Asp His Lys Ala Lys Ile Phe Gln Val Val Pro Ile  
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Pro Val Val Lys Lys Lys Leu  
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<212> PRT  
<213> Homo sapiens

<400> 14

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Arg Val Pro Pro Ser Leu Pro Leu Gln Glu Val His Val Ser Lys Glu  
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Thr Ile Gly Lys Ile Ser Ala Ala Ser Lys Met Met Trp Cys Ser Ala  
  35               40               45

Ala Val Asp Ile Met Phe Leu Leu Asp Gly Ser Asn Ser Val Gly Lys  
  50               55               60

Gly Ser Phe Glu Arg Ser Lys His Phe Ala Ile Thr Val Cys Asp Gly  
  65               70               75               80

Leu Asp Ile Ser Pro Glu Arg Val Arg Val Gly Ala Phe Gln Phe Ser  
  85               90               95

Ser Thr Pro His Leu Glu Phe Pro Leu Asp Ser Phe Ser Thr Gln Gln  
  100              105              110

Glu Val Lys Ala Arg Ile Lys Arg Met Val Phe Lys Gly Gly Arg Thr  
  115              120              125

Glu Thr Glu Leu Ala Leu Lys Tyr Leu Leu His Arg Gly Leu Pro Gly  
  130              135              140

Gly Arg Asn Ala Ser Val Pro Gln Ile Leu Ile Val Thr Asp Gly  
  145              150              155              160

Lys Ser Gln Gly Asp Val Ala Leu Pro Ser Lys Gln Leu Lys Glu Arg  
  165              170              175

Gly Val Thr Val Phe Ala Val Gly Val Arg Phe Pro Arg Trp Glu Glu  
  180              185              190

Leu His Ala Leu Ala Ser Glu Pro Arg Gly Gln His Val Leu Leu Ala  
  195              200              205

Glu Gln Val Glu Asp Ala Thr Asn Gly Leu Phe Ser Thr Leu Ser Ser  
  210              215              220

Ser Ala Ile Cys Ser Ser Ala Thr Pro Asp Cys Arg Val Glu Ala His  
  225              230              235              240

Pro Cys Glu His Arg Thr Leu Glu Met Val Arg Glu Phe Ala Gly Asn  
  245              250              255

Ala Pro Cys Trp Arg Gly Ser Arg Arg Thr Leu Ala Val Leu Ala Ala  
  260              265              270

His Cys Pro Phe Tyr Ser Trp Lys Arg Val Phe Leu Thr His Pro Ala  
  275              280              285

Thr Cys Tyr Arg Thr Thr Cys Pro Gly Pro Cys Asp Ser Gln Pro Cys  
  290              295              300

Gln Asn Gly Gly Thr Cys Val Pro Glu Gly Leu Asp Gly Tyr Gln Cys

305                   310                   315                   320  
Leu Cys Pro Leu Ala Phe Gly Gly Glu Ala Asn Cys Ala Leu Lys Leu  
325                   330                   335  
Ser Leu Glu Cys Arg Val Asp Leu Leu Phe Leu Leu Asp Ser Ser Ala  
340                   345                   350  
Gly Thr Thr Leu Asp Gly Phe Leu Arg Ala Lys Val Phe Val Lys Arg  
355                   360                   365  
Phe Val Arg Ala Val Leu Ser Glu Asp Ser Arg Ala Arg Val Gly Val  
370                   375                   380  
Ala Thr Tyr Ser Arg Glu Leu Leu Val Ala Val Pro Val Gly Glu Tyr  
385                   390                   395                   400  
Gln Asp Val Pro Asp Leu Val Trp Ser Leu Asp Gly Ile Pro Phe Arg  
405                   410                   415  
Gly Gly Pro Thr Leu Thr Gly Ser Ala Leu Arg Gln Ala Ala Glu Arg  
420                   425                   430  
Gly Phe Gly Ser Ala Thr Arg Thr Gly Gln Asp Arg Pro Arg Arg Val  
435                   440                   445  
Val Val Leu Leu Thr Glu Ser His Ser Glu Asp Glu Val Ala Gly Pro  
450                   455                   460  
Ala Arg His Ala Arg Ala Arg Glu Leu Leu Leu Leu Gly Val Gly Ser  
465                   470                   475                   480  
Glu Ala Val Arg Ala Glu Leu Glu Glu Ile Thr Gly Ser Pro Lys His  
485                   490                   495  
Val Met Val Tyr Ser Asp Pro Gln Asp Leu Phe Asn Gln Ile Pro Glu  
500                   505                   510  
Leu Gln Gly Lys Leu Cys Ser Arg Gln Arg Pro Gly Cys Arg Thr Gln  
515                   520                   525  
Ala Leu Asp Leu Val Phe Met Leu Asp Thr Ser Ala Ser Val Gly Pro  
530                   535                   540  
Glu Asn Phe Ala Gln Met Gln Ser Phe Val Arg Ser Cys Ala Leu Gln  
545                   550                   555                   560  
Phe Glu Val Asn Pro Asp Val Thr Gln Val Gly Leu Val Val Tyr Gly  
565                   570                   575  
Ser Gln Val Gln Thr Ala Phe Gly Leu Asp Thr Lys Pro Thr Arg Ala  
580                   585                   590  
Ala Met Leu Arg Ala Ile Ser Gln Ala Pro Tyr Leu Gly Gly Val Gly  
595                   600                   605  
Ser Ala Gly Thr Ala Leu Leu His Ile Tyr Asp Lys Val Met Thr Val

610

615

620

Gln Arg Gly Ala Arg Pro Gly Val Pro Lys Ala Val Val Val Leu Thr  
625 630 635 640

Gly Gly Arg Gly Ala Glu Asp Ala Ala Val Pro Ala Gln Lys Leu Arg  
645 650 655

Asn Asn Gly Ile Ser Val Leu Val Val Gly Val Gly Pro Val Leu Ser  
660 665 670

Glu Gly Leu Arg Arg Leu Ala Gly Pro Arg Asp Ser Leu Ile His Val  
675 680 685

Ala Ala Tyr Ala Asp Leu Arg Tyr His Gln Asp Val Leu Ile Glu Trp  
690 695 700

Leu Cys Gly Glu Ala Lys Gln Pro Val Asn Leu Cys Lys Pro Ser Pro  
705 710 715 720

Cys Met Asn Glu Gly Ser Cys Val Leu Gln Asn Gly Ser Tyr Arg Cys  
725 730 735

Lys Cys Arg Asp Gly Trp Glu Gly Pro His Cys Glu Asn Arg Phe Leu  
740 745 750

Arg Arg Pro  
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<211> 300

<212> PRT

<213> Homo sapiens

<400> 15

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Tyr Asn Lys Tyr Pro Asp Ala Val Ala Thr Trp Leu Asn Pro Asp Pro  
35 40 45

Ser Gln Lys Gln Asn Leu Leu Ala Pro Gln Thr Leu Pro Ser Lys Ser  
50 55 60

Asn Glu Ser His Asp His Met Asp Asp Met Asp Asp Glu Asp Asp Asp  
65 70 75 80

Asp His Val Asp Ser Gln Asp Ser Ile Asp Ser Asn Asp Ser Asp Asp  
85 90 95

Val Asp Asp Thr Asp Asp Ser His Gln Ser Asp Glu Ser His His Ser  
100 105 110

Asp Glu Ser Asp Glu Leu Val Thr Asp Phe Pro Thr Asp Leu Pro Ala  
115 120 125

Thr Glu Val Phe Thr Pro Val Val Pro Thr Val Asp Thr Tyr Asp Gly  
130 135 140

Arg Gly Asp Ser Val Val Tyr Gly Leu Arg Ser Lys Ser Lys Lys Phe  
145 150 155 160

Arg Arg Pro Asp Ile Gln Tyr Pro Asp Ala Thr Asp Glu Asp Ile Thr  
165 170 175

Ser His Met Glu Ser Glu Glu Leu Asn Gly Ala Tyr Lys Ala Ile Pro  
180 185 190

Val Ala Gln Asp Leu Asn Ala Pro Ser Asp Trp Asp Ser Arg Gly Lys  
195 200 205

Asp Ser Tyr Glu Thr Ser Gln Leu Asp Asp Gln Ser Ala Glu Thr His  
210 215 220

Ser His Lys Gln Ser Arg Leu Tyr Lys Arg Lys Ala Asn Asp Glu Ser  
225 230 235 240

Asn Glu His Ser Asp Val Ile Asp Ser Gln Glu Leu Ser Lys Val Ser  
245 250 255

Arg Glu Phe His Ser His Glu Phe His Ser His Glu Asp Met Leu Val  
260 265 270

Val Asp Pro Lys Ser Lys Glu Glu Asp Lys His Leu Lys Phe Arg Ile  
275 280 285

Ser His Glu Leu Asp Ser Ala Ser Ser Glu Val Asn  
290 295 300

<210> 16

<211> 829

<212> PRT

<213> Homo sapiens

<400> 16

Met Gly Leu Pro Arg Gly Pro Leu Ala Ser Leu Leu Leu Leu Gln Val  
1 5 10 15

Cys Trp Leu Gln Cys Ala Ala Ser Glu Pro Cys Arg Ala Val Phe Arg  
20 25 30

Glu Ala Glu Val Thr Leu Glu Ala Gly Gly Ala Glu Gln Glu Pro Gly  
35 40 45

Gln Ala Leu Gly Lys Val Phe Met Gly Cys Pro Gly Gln Glu Pro Ala  
50 55 60

Leu Phe Ser Thr Asp Asn Asp Asp Phe Thr Val Arg Asn Gly Glu Thr  
65 70 75 80

Val Gln Glu Arg Arg Ser Leu Lys Glu Arg Asn Pro Leu Lys Ile Phe  
85 90 95

Pro Ser Lys Arg Ile Leu Arg Arg His Lys Arg Asp Trp Val Val Ala  
100 105 110

Pro Ile Ser Val Pro Glu Asn Gly Lys Gly Pro Phe Pro Gln Arg Leu  
115 120 125

Asn Gln Leu Lys Ser Asn Lys Asp Arg Asp Thr Lys Ile Phe Tyr Ser  
130 135 140

Ile Thr Gly Pro Gly Ala Asp Ser Pro Pro Glu Gly Val Phe Ala Val  
145 150 155 160

Glu Lys Glu Thr Gly Trp Leu Leu Leu Asn Lys Pro Leu Asp Arg Glu  
165 170 175

Glu Ile Ala Lys Tyr Glu Leu Phe Gly His Ala Val Ser Glu Asn Gly  
180 185 190

Ala Ser Val Glu Asp Pro Met Asn Ile Ser Ile Ile Val Thr Asp Gln  
195 200 205

Asn Asp His Lys Pro Lys Phe Thr Gln Asp Thr Phe Arg Gly Ser Val  
210 215 220

Leu Glu Gly Val Leu Pro Gly Thr Ser Val Met Gln Val Thr Ala Thr  
225 230 235 240

Asp Glu Asp Asp Ala Ile Tyr Thr Tyr Asn Gly Val Val Ala Tyr Ser  
245 250 255

Ile His Ser Gln Glu Pro Lys Asp Pro His Asp Leu Met Phe Thr Ile  
260 265 270

His Arg Ser Thr Gly Thr Ile Ser Val Ile Ser Ser Gly Leu Asp Arg  
275 280 285

Glu Lys Val Pro Glu Tyr Thr Leu Thr Ile Gln Ala Thr Asp Met Asp  
290 295 300

Gly Asp Gly Ser Thr Thr Ala Val Ala Val Val Glu Ile Leu Asp  
305 310 315 320

Ala Asn Asp Asn Ala Pro Met Phe Asp Pro Gln Lys Tyr Glu Ala His  
325 330 335

Val Pro Glu Asn Ala Val Gly His Glu Val Gln Arg Leu Thr Val Thr  
340 345 350

Asp Leu Asp Ala Pro Asn Ser Pro Ala Trp Arg Ala Thr Tyr Leu Ile  
355 360 365

Met Gly Gly Asp Asp Gly Asp His Phe Thr Ile Thr Thr His Pro Glu  
370 375 380

Ser Asn Gln Gly Ile Leu Thr Thr Arg Lys Gly Leu Asp Phe Glu Ala  
385 390 395 400

Lys Asn Gln His Thr Leu Tyr Val Glu Val Thr Asn Glu Ala Pro Phe  
405 410 415

Val Leu Lys Leu Pro Thr Ser Thr Ala Thr Ile Val Val His Val Glu  
420 425 430

Asp Val Asn Glu Ala Pro Val Phe Val Pro Pro Ser Lys Val Val Glu  
435 440 445

Val Gln Glu Gly Ile Pro Thr Gly Glu Pro Val Cys Val Tyr Thr Ala  
450 455 460

Glu Asp Pro Asp Lys Glu Asn Gln Lys Ile Ser Tyr Arg Ile Leu Arg  
465 470 475 480

Asp Pro Ala Gly Trp Leu Ala Met Asp Pro Asp Ser Gly Gln Val Thr  
485 490 495

Ala Val Gly Thr Leu Asp Arg Glu Asp Glu Gln Phe Val Arg Asn Asn  
500 505 510

Ile Tyr Glu Val Met Val Leu Ala Met Asp Asn Gly Ser Pro Pro Thr  
515 520 525

Thr Gly Thr Gly Thr Leu Leu Leu Thr Leu Ile Asp Val Asn Asp His  
530 535 540

Gly Pro Val Pro Glu Pro Arg Gln Ile Thr Ile Cys Asn Gln Ser Pro  
545 550 555 560

Val Arg Gln Val Leu Asn Ile Thr Asp Lys Asp Leu Ser Pro His Thr  
565 570 575

Ser Pro Phe Gln Ala Gln Leu Thr Asp Asp Ser Asp Ile Tyr Trp Thr  
580 585 590

Ala Glu Val Asn Glu Glu Gly Asp Thr Val Val Leu Ser Leu Lys Lys  
595 600 605

Phe Leu Lys Gln Asp Thr Tyr Asp Val His Leu Ser Leu Ser Asp His  
610 615 620

Gly Asn Lys Glu Gln Leu Thr Val Ile Arg Ala Thr Val Cys Asp Cys  
625 630 635 640

His Gly His Val Glu Thr Cys Pro Gly Pro Trp Lys Gly Gly Phe Ile  
645 650 655

Leu Pro Val Leu Gly Ala Val Leu Ala Leu Leu Phe Leu Leu Leu Val  
660 665 670

Leu Leu Leu Leu Val Arg Lys Lys Arg Lys Ile Lys Glu Pro Leu Leu  
675 680 685

Leu Pro Glu Asp Asp Thr Arg Asp Asn Val Phe Tyr Tyr Gly Glu Glu  
690 695 700

Gly Gly Gly Glu Glu Asp Gln Asp Tyr Asp Ile Thr Gln Leu His Arg  
705 710 715 720

Gly Leu Glu Ala Arg Pro Glu Val Val Leu Arg Asn Asp Val Ala Pro  
725 730 735

Thr Ile Ile Pro Thr Pro Met Tyr Arg Pro Arg Pro Ala Asn Pro Asp  
740 745 750

Glu Ile Gly Asn Phe Ile Ile Glu Asn Leu Lys Ala Ala Asn Thr Asp  
755 760 765

Pro Thr Ala Pro Pro Tyr Asp Thr Leu Leu Val Phe Asp Tyr Glu Gly  
770 775 780

Ser Gly Ser Asp Ala Ala Ser Leu Ser Ser Leu Thr Ser Ser Ala Ser  
785 790 795 800

Asp Gln Asp Gln Asp Tyr Asp Tyr Leu Asn Glu Trp Gly Ser Arg Phe  
805 810 815

Lys Lys Leu Ala Asp Met Tyr Gly Gly Glu Asp Asp  
820 825

<210> 17  
<211> 694  
<212> PRT  
<213> Homo sapiens

<400> 17

Met Lys His Leu Lys Arg Trp Trp Ser Ala Gly Gly Gly Leu Leu His  
1 5 10 15

Leu Thr Leu Leu Ser Leu Ala Gly Leu Arg Val Asp Leu Asp Leu  
20 25 30

Tyr Leu Leu Leu Pro Pro Pro Thr Leu Leu Gln Asp Glu Leu Leu Phe  
35 40 45

Leu Gly Gly Pro Ala Ser Ser Ala Tyr Ala Leu Ser Pro Phe Ser Ala  
50 55 60

Ser Gly Gly Trp Gly Arg Ala Gly His Leu His Pro Lys Gly Arg Glu  
65 70 75 80

Leu Asp Pro Ala Ala Pro Pro Glu Gly Gln Leu Leu Arg Glu Val Arg  
85 90 95

Ala Leu Gly Val Pro Phe Val Pro Arg Thr Ser Val Asp Ala Trp Leu  
100 105 110

Val His Ser Val Ala Ala Gly Ser Ala Asp Glu Ala His Gly Leu Leu

115	120	125
Gly Ala Ala Ala Ala Ser Ser Thr Gly Gly Ala Gly Ala Ser Val Asp		
130	135	140
Gly Gly Ser Gln Ala Val Gln Gly Gly Gly Asp Pro Arg Ala Ala		
145	150	155
Arg Ser Gly Pro Leu Asp Ala Gly Glu Glu Glu Lys Ala Pro Ala Glu		
165	170	175
Pro Thr Ala Gln Val Pro Asp Ala Gly Gly Cys Ala Ser Glu Glu Asn		
180	185	190
Gly Val Leu Arg Glu Lys His Glu Ala Val Asp His Ser Ser Gln His		
195	200	205
Glu Glu Asn Glu Glu Arg Val Ser Ala Gln Lys Glu Asn Ser Leu Gln		
210	215	220
Gln Asn Asp Asp Asp Glu Asn Lys Ile Ala Glu Lys Pro Asp Trp Glu		
225	230	235
Ala Glu Lys Thr Thr Glu Ser Arg Asn Glu Arg His Leu Asn Gly Thr		
245	250	255
Asp Thr Ser Phe Ser Leu Glu Asp Leu Phe Gln Leu Leu Ser Ser Gln		
260	265	270
Pro Glu Asn Ser Leu Glu Gly Ile Ser Leu Gly Asp Ile Pro Leu Pro		
275	280	285
Gly Ser Ile Ser Asp Gly Met Asn Ser Ser Ala His Tyr His Val Asn		
290	295	300
Phe Ser Gln Ala Ile Ser Gln Asp Val Asn Leu His Glu Ala Ile Leu		
305	310	315
320		
Leu Cys Pro Asn Asn Thr Phe Arg Arg Asp Pro Thr Ala Arg Thr Ser		
325	330	335
Gln Ser Gln Glu Pro Phe Leu Gln Leu Asn Ser His Thr Thr Asn Pro		
340	345	350
Glu Gln Thr Leu Pro Gly Thr Asn Leu Thr Gly Phe Leu Ser Pro Val		
355	360	365
Asp Asn His Met Arg Asn Leu Thr Ser Gln Asp Leu Leu Tyr Asp Leu		
370	375	380
Asp Ile Asn Ile Phe Asp Glu Ile Asn Leu Met Ser Leu Ala Thr Glu		
385	390	395
400		
Asp Asn Phe Asp Pro Ile Asp Val Ser Gln Leu Phe Asp Glu Pro Asp		
405	410	415
Ser Asp Ser Gly Leu Ser Leu Asp Ser Ser His Asn Asn Thr Ser Val		

	420	425	430
Ile Lys Ser Asn Ser Ser His Ser Val Cys Asp Glu Gly Ala Ile Gly			
435	440	445	
Tyr Cys Thr Asp His Glu Ser Ser Ser His His Asp Leu Glu Gly Ala			
450	455	460	
Val Gly Gly Tyr Tyr Pro Glu Pro Ser Lys Leu Cys His Leu Asp Gln			
465	470	475	480
Ser Asp Ser Asp Phe His Gly Asp Leu Thr Phe Gln His Val Phe His			
485	490		495
Asn His Thr Tyr His Leu Gln Pro Thr Ala Pro Glu Ser Thr Ser Glu			
500	505	510	
Pro Phe Pro Trp Pro Gly Lys Ser Gln Lys Ile Arg Ser Arg Tyr Leu			
515	520	525	
Glu Asp Thr Asp Arg Asn Leu Ser Arg Asp Glu Gln Arg Ala Lys Ala			
530	535	540	
Leu His Ile Pro Phe Ser Val Asp Glu Ile Val Gly Met Pro Val Asp			
545	550	555	560
Ser Phe Asn Ser Met Leu Ser Arg Tyr Tyr Leu Thr Asp Leu Gln Val			
565	570	575	
Ser Leu Ile Arg Asp Ile Arg Arg Gly Lys Asn Lys Val Ala Ala			
580	585	590	
Gln Asn Cys Arg Lys Arg Lys Leu Asp Ile Ile Leu Asn Leu Glu Asp			
595	600	605	
Asp Val Cys Asn Leu Gln Ala Lys Lys Glu Thr Leu Lys Arg Glu Gln			
610	615	620	
Ala Gln Cys Asn Lys Ala Ile Asn Ile Met Lys Gln Lys Leu His Asp			
625	630	635	640
Leu Tyr His Asp Ile Phe Ser Arg Leu Arg Asp Asp Gln Gly Arg Pro			
645	650	655	
Val Asn Pro Asn His Tyr Ala Leu Gln Cys Thr His Asp Gly Ser Ile			
660	665	670	
Leu Ile Val Pro Lys Glu Leu Val Ala Ser Gly His Lys Lys Glu Thr			
675	680	685	
Gln Lys Gly Lys Arg Lys			
690			

<210> 18  
<211> 402  
<212> PRT  
<213> Homo sapiens

<400> 18

Met Lys Leu Glu Val Phe Val Pro Arg Ala Ala His Gly Asp Lys Gln  
1 5 10 15

Gly Ser Asp Leu Glu Gly Ala Gly Ser Asp Ala Pro Ser Pro Leu  
20 25 30

Ser Ala Ala Gly Asp Asp Ser Leu Gly Ser Asp Gly Asp Cys Ala Ala  
35 40 45

Lys Pro Ser Ala Gly Gly Ala Arg Asp Thr Gln Gly Asp Gly Glu  
50 55 60

Gln Ser Ala Gly Gly Pro Gly Ala Glu Glu Ala Ile Pro Ala Ala  
65 70 75 80

Ala Ala Ala Ala Val Val Ala Glu Gly Ala Glu Ala Gly Ala Ala Gly  
85 90 95

Pro Gly Ala Gly Gly Ala Gly Ser Gly Glu Gly Ala Arg Ser Lys Pro  
100 105 110

Tyr Thr Arg Arg Pro Lys Pro Pro Tyr Ser Tyr Ile Ala Leu Ile Ala  
115 120 125

Met Ala Ile Arg Asp Ser Ala Gly Gly Arg Leu Thr Leu Ala Glu Ile  
130 135 140

Asn Glu Tyr Leu Met Gly Lys Phe Pro Phe Phe Arg Gly Ser Tyr Thr  
145 150 155 160

Gly Trp Arg Asn Ser Val Arg His Asn Leu Ser Leu Asn Asp Cys Phe  
165 170 175

Val Lys Val Leu Arg Asp Pro Ser Arg Pro Trp Gly Lys Asp Asn Tyr  
180 185 190

Trp Met Leu Asn Pro Asn Ser Glu Tyr Thr Phe Ala Asp Gly Val Phe  
195 200 205

Arg Arg Arg Arg Lys Arg Leu Ser His Arg Ala Pro Val Pro Ala Pro  
210 215 220

Gly Leu Arg Pro Glu Glu Ala Pro Gly Leu Pro Ala Ala Pro Pro Pro  
225 230 235 240

Ala Pro Ala Ala Pro Ala Ser Pro Arg Met Arg Ser Pro Ala Arg Gln  
245 250 255

Glu Glu Arg Ala Ser Pro Ala Gly Lys Phe Ser Ser Ser Phe Ala Ile  
260 265 270

Asp Ser Ile Leu Arg Lys Pro Phe Arg Ser Arg Arg Leu Arg Asp Thr  
275 280 285

Ala Pro Gly Thr Thr Leu Gln Trp Gly Ala Ala Pro Cys Pro Pro Leu  
290 295 300

Pro Ala Phe Pro Ala Leu Leu Pro Ala Ala Pro Cys Arg Ala Leu Leu  
305 310 315 320

Pro Leu Cys Ala Tyr Gly Ala Gly Glu Pro Ala Arg Leu Gly Ala Arg  
325 330 335

Glu Ala Glu Val Pro Pro Thr Ala Pro Pro Leu Leu Leu Ala Pro Leu  
340 345 350

Pro Ala Ala Ala Pro Ala Lys Pro Leu Arg Gly Pro Ala Ala Gly Gly  
355 360 365

Ala His Leu Tyr Cys Pro Leu Arg Leu Pro Ala Ala Leu Gln Ala Ala  
370 375 380

Leu Val Arg Arg Pro Gly Pro His Leu Ser Tyr Pro Val Glu Thr Leu  
385 390 395 400

Leu Ala

<210> 19

<211> 209

<212> PRT

<213> Homo sapiens

<400> 19

Met Glu Lys His His Val Pro Ser Asp Phe Asn Val Asn Val Lys Val  
1 5 10 15

Asp Thr Gly Pro Arg Glu Asp Leu Ile Lys Val Leu Glu Asp Met Arg  
20 25 30

Gln Glu Tyr Glu Leu Ile Ile Lys Lys Lys His Arg Asp Leu Asp Thr  
35 40 45

Trp Tyr Lys Glu Gln Ser Ala Ala Met Ser Gln Glu Ala Ala Ser Pro  
50 55 60

Ala Thr Val Gln Ser Arg Gln Gly Asp Ile His Glu Leu Lys Arg Thr  
65 70 75 80

Phe Gln Ala Leu Glu Ile Asp Leu Gln Ala Gln Tyr Ser Thr Lys Ser  
85 90 95

Ala Leu Glu Asn Met Leu Ser Glu Thr Gln Ser Arg Tyr Ser Cys Lys  
100 105 110

Leu Gln Asp Met Gln Glu Ile Ile Ser His Tyr Glu Glu Leu Thr  
115 120 125

Gln Leu Arg His Glu Leu Glu Arg Gln Asn Asn Glu Tyr Gln Val Leu  
130 135 140

Leu Gly Ile Lys Thr His Leu Glu Lys Glu Ile Thr Thr Tyr Arg Arg  
145 150 155 160

Leu Leu Glu Gly Glu Ser Glu Gly Thr Arg Glu Glu Ser Lys Ser Ser  
165 170 175

Met Lys Val Ser Ala Thr Pro Lys Ile Lys Ala Ile Thr Gln Glu Thr  
180 185 190

Ile Asn Gly Arg Leu Val Leu Cys Gln Val Asn Glu Ile Gln Lys His  
195 200 205

Ala

<210> 20  
<211> 278  
<212> PRT  
<213> Homo sapiens

<400> 20

Met Asp Lys Ser Gly Ile Asp Ser Leu Asp His Val Thr Ser Asp Ala  
1 5 10 15

Val Glu Leu Ala Asn Arg Ser Asp Asn Ser Ser Asp Ser Ser Leu Phe  
20 25 30

Lys Thr Gln Cys Ile Pro Tyr Ser Pro Lys Gly Glu Lys Arg Asn Pro  
35 40 45

Ile Arg Lys Phe Val Arg Thr Pro Glu Ser Val His Ala Ser Asp Ser  
50 55 60

Ser Ser Asp Ser Ser Phe Glu Pro Ile Pro Leu Thr Ile Lys Ala Ile  
65 70 75 80

Phe Glu Arg Phe Lys Asn Arg Lys Lys Arg Tyr Lys Lys Lys Lys Lys  
85 90 95

Arg Arg Tyr Gln Pro Thr Gly Arg Pro Arg Gly Arg Pro Glu Gly Arg  
100 105 110

Arg Asn Pro Ile Tyr Ser Leu Ile Asp Lys Lys Lys Gln Phe Arg Ser  
115 120 125

Arg Gly Ser Gly Phe Pro Phe Leu Glu Ser Glu Asn Glu Lys Asn Ala  
130 135 140

Pro Trp Arg Lys Ile Leu Thr Phe Glu Gln Ala Val Ala Arg Gly Phe  
145 150 155 160

Phe Asn Tyr Ile Glu Lys Leu Lys Tyr Glu His His Leu Lys Glu Ser  
165 170 175

Leu Lys Gln Met Asn Val Gly Glu Asp Leu Glu Asn Glu Asp Phe Asp  
180 185 190

Ser Arg Arg Tyr Lys Phe Leu Asp Asp Asp Gly Ser Ile Ser Pro Ile  
195 200 205

Glu Glu Ser Thr Ala Glu Asp Glu Asp Ala Thr His Leu Glu Asp Asn  
210 215 220

Glu Cys Asp Ile Lys Leu Ala Gly Asp Ser Phe Ile Val Ser Ser Glu  
225 230 235 240

Phe Pro Val Arg Leu Ser Val Tyr Leu Glu Glu Asp Ile Thr Glu  
245 250 255

Glu Ala Ala Leu Ser Lys Lys Arg Ala Thr Lys Ala Lys Asn Thr Gly  
260 265 270

Gln Arg Gly Leu Lys Met  
275

<210> 21  
<211> 488  
<212> PRT  
<213> C-TERMINAL PORTION OF ColoUp2

<400> 21

Ala Val Leu Ala Ala His Cys Pro Phe Tyr Ser Trp Lys Arg Val Phe  
1 5 10 15

Leu Thr His Pro Ala Thr Cys Tyr Arg Thr Thr Cys Pro Gly Pro Cys  
20 25 30

Asp Ser Gln Pro Cys Gln Asn Gly Gly Thr Cys Val Pro Glu Gly Leu  
35 40 45

Asp Gly Tyr Gln Cys Leu Cys Pro Leu Ala Phe Gly Gly Glu Ala Asn  
50 55 60

Cys Ala Leu Lys Leu Ser Leu Glu Cys Arg Val Asp Leu Leu Phe Leu  
65 70 75 80

Leu Asp Ser Ser Ala Gly Thr Thr Leu Asp Gly Phe Leu Arg Ala Asp  
85 90 95

Val Phe Val Lys Arg Phe Val Arg Ala Val Leu Ser Glu Asp Ser Arg  
100 105 110

Ala Arg Val Gly Val Ala Thr Tyr Ser Arg Glu Leu Leu Val Ala Val  
115 120 125

Pro Val Gly Glu Tyr Gln Asp Val Pro Asp Leu Val Trp Ser Leu Asp  
130 135 140

Gly Ile Pro Phe Arg Gly Gly Pro Thr Leu Thr Gly Ser Ala Leu Arg  
145 150 155 160

Gln Ala Ala Glu Arg Gly Phe Gly Ser Ala Thr Arg Thr Gly Gln Asp  
165 170 175

Arg Pro Arg Arg Val Val Val Leu Leu Thr Glu Ser His Ser Glu Asp  
180 185 190

Glu Val Ala Gly Pro Ala Arg His Ala Arg Ala Arg Glu Leu Leu Leu  
195 200 205

Leu Gly Val Gly Ser Glu Ala Val Arg Ala Glu Leu Glu Glu Ile Thr  
210 215 220

Gly Ser Pro Lys His Val Met Val Tyr Ser Asp Pro Gln Asp Leu Phe  
225 230 235 240

Asn Gln Ile Pro Glu Leu Gln Gly Lys Leu Cys Ser Arg Gln Arg Pro  
245 250 255

Gly Cys Arg Thr Gln Ala Leu Asp Leu Val Phe Met Leu Asp Thr Ser  
260 265 270

Ala Ser Val Gly Pro Glu Asn Phe Ala Gln Met Gln Ser Phe Val Arg  
275 280 285

Ser Cys Ala Leu Gln Phe Glu Val Asn Pro Asp Val Thr Gln Val Gly  
290 295 300

Leu Val Val Tyr Gly Ser Gln Val Gln Thr Ala Phe Gly Leu Asp Thr  
305 310 315 320

Lys Pro Thr Arg Ala Ala Met Leu Arg Ala Ile Ser Gln Ala Pro Tyr  
325 330 335

Leu Gly Gly Val Gly Ser Ala Gly Thr Ala Leu Leu His Ile Tyr Asp  
340 345 350

Lys Val Met Thr Val Gln Arg Gly Ala Arg Pro Gly Val Pro Lys Ala

355

360

365

Val Val Val Leu Thr Gly Gly Arg Gly Ala Glu Asp Ala Ala Val Pro  
370 375 380

Ala Gln Lys Leu Arg Asn Asn Gly Ile Ser Val Leu Val Val Gly Val  
385 390 395 400

Gly Pro Val Leu Ser Glu Gly Leu Arg Arg Leu Ala Gly Pro Arg Asp  
405 410 415

Ser Leu Ile His Val Ala Ala Tyr Ala Asp Leu Arg Tyr His Gln Asp  
420 425 430

Val Leu Ile Glu Trp Leu Cys Gly Glu Ala Lys Gln Pro Val Asn Leu  
435 440 445

Cys Lys Pro Ser Pro Cys Met Asn Glu Gly Ser Cys Val Leu Gln Asn  
450 455 460

Gly Ser Tyr Arg Cys Lys Cys Arg Asp Gly Trp Glu Gly Pro His Cys  
465 470 475 480

Glu Asn Arg Phe Leu Arg Arg Pro  
485

<210> 22

<211> 403

<212> PRT

<213> HUMAN FOXQ1

<400> 22

Met Lys Leu Glu Val Phe Val Pro Arg Ala Ala His Gly Asp Lys Gln  
1 5 10 15

Gly Ser Asp Leu Glu Gly Ala Gly Ser Asp Ala Pro Ser Pro Leu  
20 25 30

Ser Ala Ala Gly Asp Asp Ser Leu Gly Ser Asp Gly Asp Cys Ala Ala  
35 40 45

Asn Ser Pro Ala Ala Gly Gly Ala Arg Asp Pro Pro Gly Asp Gly  
50 55 60

Glu Gln Ser Ala Gly Gly Gly Pro Gly Ala Glu Glu Ala Ile Pro Ala  
65 70 75 80

Ala Ala Ala Ala Ala Val Val Ala Glu Gly Ala Glu Ala Gly Ala Ala  
85 90 95

Gly Pro Gly Ala Gly Gly Ala Gly Ser Gly Glu Gly Ala Arg Ser Lys  
100 105 110

Pro Tyr Thr Arg Arg Pro Lys Pro Pro Tyr Ser Tyr Ile Ala Leu Ile  
115 120 125

Ala Met Ala Ile Arg Asp Ser Ala Gly Gly Arg Leu Thr Leu Ala Glu  
130 135 140

Ile Asn Glu Tyr Leu Met Gly Lys Phe Pro Phe Phe Arg Gly Ser Tyr  
145 150 155 160

Thr Gly Trp Arg Asn Ser Val Arg His Asn Leu Ser Leu Asn Asp Cys  
165 170 175

Phe Val Lys Val Leu Arg Asp Pro Ser Arg Pro Trp Gly Lys Asp Asn  
180 185 190

Tyr Trp Met Leu Asn Pro Asn Ser Glu Tyr Thr Phe Ala Asp Gly Val  
195 200 205

Phe Arg Arg Arg Arg Lys Arg Leu Ser His Arg Ala Pro Val Pro Ala  
210 215 220

Pro Gly Leu Arg Pro Glu Glu Ala Pro Gly Leu Pro Ala Ala Pro Pro  
225 230 235 240

Pro Ala Pro Ala Ala Pro Ala Ser Pro Arg Met Arg Ser Pro Ala Arg  
245 250 255

Gln Glu Glu Arg Ala Ser Pro Ala Gly Lys Phe Ser Ser Ser Phe Ala  
260 265 270

Ile Asp Ser Ile Leu Arg Lys Pro Phe Arg Ser Arg Arg Leu Arg Asp  
275 280 285

Thr Ala Pro Gly Thr Thr Leu Gln Trp Gly Ala Ala Pro Cys Pro Pro  
290 295 300

Leu Pro Ala Phe Pro Ala Leu Leu Pro Ala Ala Pro Cys Arg Ala Leu  
305 310 315 320

Leu Pro Leu Cys Ala Tyr Gly Ala Gly Glu Pro Ala Arg Leu Gly Ala  
325 330 335

Arg Glu Ala Glu Val Pro Pro Thr Ala Pro Pro Leu Leu Leu Ala Pro  
340 345 350

Leu Pro Ala Ala Ala Pro Ala Lys Pro Leu Arg Gly Pro Ala Ala Gly  
355 360 365

Gly Ala His Leu Tyr Cys Pro Leu Arg Leu Pro Ala Ala Leu Gln Ala  
370 375 380

Ala Ser Val Arg Arg Pro Gly Pro His Leu Pro Tyr Pro Val Glu Thr  
385 390 395 400

Leu Leu Ala

<210> 23  
<211> 400  
<212> PRT  
<213> MOUSE FOXQ1

<400> 23

Met Lys Leu Glu Val Phe Val Pro Arg Ala Ala His Gly Asp Lys Met  
1 5 10 15

Gly Ser Asp Leu Glu Gly Ala Gly Ser Ser Asp Val Pro Ser Pro Leu  
20 25 30

Ser Ala Ala Gly Asp Asp Ser Leu Gly Ser Asp Gly Asp Cys Ala Ala  
35 40 45

Asn Ser Pro Ala Ala Gly Ser Gly Ala Gly Asp Leu Glu Gly Gly Gly  
50 55 60

Gly Glu Arg Asn Ser Ser Gly Gly Pro Ser Ala Gln Asp Gly Pro Glu  
65 70 75 80

Ala Thr Asp Asp Ser Arg Thr Gln Ala Ser Ala Ala Gly Pro Cys Ala  
85 90 95

Gly Gly Val Gly Gly Glu Gly Ala Arg Ser Lys Pro Tyr Thr Arg  
100 105 110

Arg Pro Lys Pro Pro Tyr Ser Tyr Ile Ala Leu Ile Ala Met Ala Ile  
115 120 125

Arg Asp Ser Ala Gly Gly Arg Leu Thr Leu Ala Glu Ile Asn Glu Tyr  
130 135 140

Leu Met Gly Lys Phe Pro Phe Phe Arg Gly Ser Tyr Thr Gly Trp Arg  
145 150 155 160

Asn Ser Val Arg His Asn Leu Ser Leu Asn Asp Cys Phe Val Lys Val  
165 170 175

Leu Arg Asp Pro Ser Arg Pro Trp Gly Lys Asp Asn Tyr Trp Met Leu  
180 185 190

Asn Pro Asn Ser Glu Tyr Thr Phe Ala Asp Gly Val Phe Arg Arg Arg  
195 200 205

Arg Lys Arg Leu Ser His Arg Thr Thr Val Ser Ala Ser Gly Leu Arg  
210 215 220

Pro Glu Glu Ala Pro Pro Gly Pro Ala Gly Thr Pro Gln Pro Ala Pro  
225 230 235 240

Ala Ala Arg Ser Ser Pro Ile Ala Arg Ser Pro Ala Arg Gln Glu Glu  
245 250 255

Arg Ser Ser Pro Ala Ser Lys Phe Ser Ser Ser Phe Ala Ile Asp Ser  
260 265 270

Ile Leu Ser Lys Pro Phe Arg Ser Arg Arg Asp Gly Asp Ser Ala Leu  
275 280 285

Gly Val Gln Leu Pro Trp Gly Ala Ala Pro Cys Pro Pro Leu Arg Ala  
290 295 300

Tyr Pro Ala Leu Leu Pro Ala Ala Pro Gly Gly Ala Leu Leu Pro Leu  
305 310 315 320

Cys Ala Tyr Gly Ala Ser Glu Pro Thr Leu Leu Ala Ser Arg Gly Thr  
325 330 335

Glu Val Gln Pro Ala Ala Pro Leu Leu Ala Pro Leu Ser Thr Ala  
340 345 350

Ala Pro Ala Lys Pro Phe Arg Gly Pro Glu Thr Ala Gly Ala Ala His  
355 360 365

Leu Tyr Cys Pro Leu Arg Leu Pro Thr Ala Leu Gln Ala Ala Ala Ala  
370 375 380

Cys Gly Pro Gly Pro His Leu Ser Tyr Pro Val Glu Thr Leu Leu Ala  
385 390 395 400

<210> 24  
<211> 400  
<212> PRT  
<213> RAT FOX Q1

<400> 24

Met Lys Leu Glu Val Phe Ala Pro Arg Ala Ala His Gly Asp Lys Met  
1 5 10 15

Gly Ser Asp Leu Glu Gly Ala Gly Ser Ser Asp Val Pro Ser Pro Leu  
20 25 30

Ser Ala Ala Gly Asp Asp Ser Leu Gly Ser Asp Gly Asp Cys Ala Ala  
35 40 45

Asn Ser Pro Ala Ala Gly Arg Gly Ala Val Asp Leu Glu Gly Gly Gly  
50 55 60

Gly Glu Arg Asn Ser Ser Gly Gly Ala Ser Thr Gln Asp Asp Pro Glu  
65 70 75 80

Val Thr Asp Gly Ser Arg Thr Gln Ala Ser Pro Val Gly Pro Cys Ala  
85 90 95

Gly Ser Val Gly Gly Glu Gly Ala Arg Ser Lys Pro Tyr Thr Arg  
100 105 110

Arg Pro Lys Pro Pro Tyr Ser Tyr Ile Ala Leu Ile Ala Met Ala Ile  
115 120 125

Arg Asp Ser Ala Gly Gly Arg Leu Thr Leu Ala Glu Ile Asn Glu Tyr  
130 135 140

Leu Met Gly Lys Phe Pro Phe Phe Arg Gly Ser Tyr Thr Gly Trp Arg  
145 150 155 160

Asn Ser Val Arg His Asn Leu Ser Leu Asn Asp Cys Phe Val Lys Val  
165 170 175

Leu Arg Asp Pro Ser Arg Pro Trp Gly Lys Asp Asn Tyr Trp Met Leu  
180 185 190

Asn Pro Asn Ser Glu Tyr Thr Phe Ala Asp Gly Val Phe Arg Arg Arg  
195 200 205

Arg Lys Arg Leu Ser His Arg Thr Thr Val Ser Ala Ser Gly Leu Arg  
210 215 220

Pro Glu Glu Ala Pro Pro Gly Pro Ala Gly Thr Pro Gln Pro Ala Pro  
225 230 235 240

Thr Ala Gly Ser Ser Pro Ile Ala Arg Ser Pro Ala Arg Gln Glu Glu  
245 250 255

Gly Ser Ser Pro Ala Ser Lys Phe Ser Ser Ser Phe Ala Ile Asp Ser  
260 265 270

Ile Leu Ser Lys Pro Phe Arg Ser Arg Arg Asp Gly Asp Pro Ala Leu  
275 280 285

Gly Val Gln Leu Pro Trp Ser Ala Ala Pro Cys Pro Pro Leu Arg Ala  
290 295 300

Tyr Pro Ala Leu Leu Pro Ala Ser Ser Gly Gly Ala Leu Leu Pro Leu  
305 310 315 320

Cys Ala Tyr Gly Ala Gly Glu Pro Thr Leu Leu Ala Ser Arg Gly Ala  
325 330 335

Glu Val Gln Pro Ala Ala Pro Leu Leu Leu Ala Pro Leu Ser Thr Ala  
340 345 350

Ala Pro Ala Lys Pro Phe Arg Gly Pro Glu Thr Ala Gly Ala Ala His  
355 360 365

Leu Tyr Cys Pro Leu Arg Leu Pro Thr Ala Leu Gln Ala Ala Ala Ala  
370 375 380

Cys Gly Pro Gly Pro His Leu Ser Tyr Arg Val Glu Thr Leu Leu Ala  
385 390 395 400

<210> 25

<211> 1212

<212> DNA

<213> HUMAN FOXQ1

<400> 25

atgaagttgg aggtgttcgt ccctcgcgcg gcccacgggg acaaggcaggg cagtgacctg 60  
gagggcgcgg gcggcagcga cgccgcgtcc ccgcgtgtcg ggccgggaga cgactccctg 120  
ggctcagatg gggactgcgc ggccaacacgc ccggccgcgg gcggcggcgc cagagatccg 180  
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